

Job killers or job creators?

Level: Intermediate +

Time: 90 minutes +

Summary: This lesson is about Industry 4.0, smart factories and the possible role robots will have in the future of work. In this lesson, students:

1. think of jobs that are done by robots;
2. study a text about robots;
3. complete texts with the missing words;
4. discuss the role of robots;
5. watch a video about a robot.

Materials: One copy of the worksheet per student

Group size: Any

Note: This lesson plan is for both pre-experience and in-work business students based on an original article first published in *Business Spotlight* issue 3/2016. This is a shortened version.

Warmer

Hand out the worksheets. Get students to work in pairs and write down ten jobs that used to be done by people but that are now exclusively or often carried out by robots. Then, get them to share their answers in class. How many did the class come up with in total?

Key words

Students read the definitions and scan the article to find the key words. The definitions are given in the order that the words can be found in the article.

Key:

1. elite
2. mastering
3. coming for
4. smart
5. networked
6. monitor
7. host
8. remote
9. collaborative
10. tireless
11. production lines
12. assembly

13. sensitivity

14. disabled

Understanding the article

First, get the students to answer the questions in pairs or small groups. After they have done this, they can check their answers by scanning or reading the article again.

Key:

1. 'Mastering the Fourth Industrial Revolution'; It was held in Davos in Switzerland in January, 2016.
2. the world's political and business leaders and celebrities
3. that robots want our jobs and are going to kill jobs
4. He says there will be networked robots that talk to each other and sensors that monitor manufacturing operations.
5. Cloud computing will run software applications from centralized server farms and host real-time information in data centres situated elsewhere.
6. Companies would be able to produce micro-amounts of specially developed products efficiently and economically.

Extra reading and language tasks

This task uses texts that expand on the topic of robots to practise vocabulary as well as the use of prepositions and articles.

Key:

- a.
 1. by; 2. of; 3. by; 4. as; 5. at; 6. of
- b.
 1. design; 2. computer; 3. qualified; 4. research; 5. robots; 6. degree
- c.
 1. the; 2. no article; 3. the; 4. no article; 5. the; 6. a; 7. no article; 8. the

Discussion

Students discuss the questions relating to the article. If necessary, give them prompts as follows:

- Question 1 – Find out whether there is a part of their job that they do not enjoy and which they think could be done by robots.
- Question 2 – An example answer could be the job of a nurse or midwife.
- Question 3 – One suggestion could be bomb disposal.

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Students watch a video about the YuMi robot mentioned in the article and answer questions about it.

Additional task: Students find out more about the 'internet of things' and report back on what they find.

Vocabulary record

Here, students should be encouraged to record all of the new and useful vocabulary they have learnt during the lesson, not only in the form presented in the article but also in related forms.

Related topics on onestopenglish

The following set of news lessons investigates the intriguing topic of driverless, and flying, cars:

www.onestopenglish.com/skills/news-lessons/monthly-topical-news-lessons/monthly-news-lesson-still-no-flying-cars-the-future-promises-something-better/554949.article

This set of news lessons is on the delivery of packages by drone:

www.onestopenglish.com/skills/news-lessons/weekly-topical-news-lessons/2015-weekly-news-lessons-archive/23rd-july-2015-will-drones-soon-be-delivering-packages-to-your-doorstep/554544.article

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1 Warmer

Write ten jobs that used to be done by humans and are now always or often done by robots.
E.g. painting a car



2 Key words

Read the definitions and find the key words in the article.

1. a small group of people who have a lot of advantages and keep the most power and influence

2. managing to control something _____
3. attempting to take something, such as a job, away from the person it belongs to (two words)

4. using computers to make it work so that it can act in an independent way _____
5. connected together so that each computer can send and receive information to and from the other computers

6. regularly check something or watch someone in order to find out what is happening

7. run websites on a computer, usually for companies _____
8. far away in distance _____
9. working together with others to produce something _____
10. working very hard without stopping _____
11. processes in a factory in which goods are made in stages by a series of people or machines arranged in a line (two words) _____
12. building something by putting all its parts together _____
13. the ability to sense slight differences in weight, time, temperature, etc _____
14. people who are unable to use part of their body or brain properly because of injury or disease

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Eamonn Fitzgerald



Does Industry 4.0 have to lead to a work-related struggle between man and machines? Don't robots also offer us certain opportunities? Eamonn Fitzgerald explores aspects of this new technology.

- 1 It was bitterly cold in mid-January, when the world's political and business leaders – and celebrities, including Chinese actress Yao Chen, Irish singer Bono and US actor Leonardo DiCaprio – arrived in Switzerland for the World Economic Forum conference. The global elite didn't have to worry about the frost, though. The hotels in Davos are among the best in Europe.
- 2 The theme of the conference was “Mastering the Fourth Industrial Revolution” and each of the guests was given a 157-page report with the title “The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution”. In the introduction, Klaus Schwab, executive chairman of the World Economic Forum, wrote: “The current technological revolution need not become a race between humans and machines ...”
- 3 And what were the headlines the next day? “Robots want your job”; “Robots are coming for millions of our jobs, study says”; “Millions of jobs will go as robots rise”; and “Industry 4.0 to be huge job killer”.
- 4 A central part of the Industry 4.0 concept is production powered by the “internet of things” (IoT). The vision is of connected machines constantly communicating with integrated systems. Increasingly, these machines are robots. The factories of the future will be “smart factories”, in which networked robots talk to each other, while sensors monitor manufacturing operations. In the background, cloud computing will run software applications from centralized server farms and host real-time information in remote data centres. All of these changes will mean that companies can react instantly to sudden changes in demand – and that they can even produce micro-amounts of specially developed products efficiently and economically.

5 But what about that “Industry 4.0 to be huge job killer” headline? Should we be afraid, very afraid, of these robots?

6 The Swiss technology company ABB is trying to make robots sound friendlier. YuMi is “the world's first truly collaborative robot”, ABB says of its latest tireless worker. This smart machine has been developed for an era in which industrial robots are no longer metal monsters kept far away from humans and used on automobile production lines. Instead, YuMi is a “high-precision assembly assistant” – a team worker, in other words.

7 YuMi sounds a bit like “yummy”, which is an informal English adjective for “delicious”. Talking of food, the British may not be famous for theirs, but the Moley Robotic Kitchen is being built in London and it will cook a variety of delicious dishes to world-class standards. Its pair of robotic hands can perform all the functions of human hands with the same speed and sensitivity, according to Moley. “Users will now be able to enjoy freshly cooked meals every day, with less effort than it takes to reheat a mass-produced ‘ready meal’ or order takeaway for delivery,” says Mark Oleynik of Moley.

8 The target group is “people with limited cooking ability” and busy individuals who do not have the time to cook. Also, the Moley Robotic Kitchen could be a useful home assistant, preparing warm meals with fresh food for the old, the disabled and those with special dietary needs. When it arrives on the market in 2017, it will have an app filled with yummy recipes.

9 Referring to its new robot, ABB says, “YuMi is ‘you and me’, working together to create endless possibilities”. Mastering robotics will ensure that those endless possibilities include Industry 4.0 jobs.

Eamonn Fitzgerald writes daily at www.eamonn.com. He uses social media to build relationships for organizations.

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3 Understanding the article

Answer the questions about the article.

1. What was the theme of the 2016 World Economic Forum conference, and where and when was it held?

2. Who attended the conference?

3. What was the general impression given by newspaper headlines immediately after the conference?

4. How does the author describe the smart factories of the future?

5. How will these factories be run? What will be going on in the background?

6. What benefits could smart factories bring to companies?

4 Extra reading and language tasks

a. Complete the text using the correct prepositions.

Meet the CRO

A report in 2015 _____ (1) Myria Research in Massachusetts states that 60 per cent _____ (2) US companies will have a CRO (chief robotics officer) _____ (3) 2025. In business sectors where robotics and automation will play a major role, such _____ (4) manufacturing, energy, logistics and healthcare, the CRO will have a status similar to that of today's CIO (chief information officer). 'The CROs (and their teams) will be _____ (5) the forefront _____ (6) technology', Myria wrote. The report did not say whether future CROs will be humans or robots, however.

b. Complete the text using the words in the box.

computer degree design qualified research robots

Robotics careers

The noun 'robotics' refers to the technology area that deals with the _____ (1), construction and use of robots. If you would like to work in robotics, get ready to study a multidisciplinary subject that includes mechanical engineering, electrical engineering, _____ (2) science, psychology and many other specialities. Once _____ (3), you could find a job building self-driving cars or nanomachines for medical _____ (4). To prepare students for a world of thinking _____ (5), the Technical University of Munich is offering a Master of Science (MSc) _____ (6) in 'Robotics, Cognition and Intelligence', taught in German and English.

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c. Complete the gaps with either an article – *a*, *an* or *the* – or no article.

To Mars with STEM

To solve the big problems of _____ (1) future, we will need people who are good at STEM: science, technology, engineering and _____ (2) mathematics. That's why _____ (3) University of New South Wales and the University of Sydney have created the Mars Lab. It offers _____ (4) Australian primary and high-school students exciting STEM experiences in _____ (5) form of _____ (6) robotic space-exploration mission looking for _____ (7) signs of life on _____ (8) red planet.

5 Discussion

1. Could your job, or any part of your job, be done by robots? Is this a positive or negative thing?
2. What jobs or tasks do you hope will never be done by robots?
3. What jobs or tasks do you think really should be done by robots?

6 Webquest

Watch a video about YuMi here:

new.abb.com/products/robotics/yumi

What safety features and benefits for humans does it offer?

What other features are mentioned in the video?

